

Abstract

The present invention provides a new process for producing biodiesel from renewable oil under lipase catalysis in an organic medium reaction system. In this process, a short chain alcohol ROH is used as an acyl acceptor, a relatively hydrophilic organic solvent having no negative effect on the reactivity of lipase is used as the reaction medium, and a renewable oil raw material is catalyzed by a lipase to synthesize biodiesel through a transesterification reaction. In the process of the present invention, the renewable oil raw material can be almost completely converted into biodiesel and a byproduct glycerin, and the yield of the biodiesel is 94% or more. This new type organic medium reaction system promotes the solubility of the short chain alcohol in the renewable oil raw material, and dissolves part of the byproduct glycerin. Consequently, the reaction time is shortened, the productivity of biodiesel is increased and the reactivity and lifetime of the lipase is improved in the process of the present invention.